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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,005	12/10/2003	Jae-Cheol Lee	1349.1302	6349

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EXAMINER

VO, ANH T N

ART UNIT PAPER NUMBER

2861

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/731,005

Applicant(s)

LEE ET AL.

Examiner

Anh T.N. Vo

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 12/21/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-14, 26 and 28-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14, 26 and 28-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                              |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/24/2006</u> | 6) <input type="checkbox"/> Other: _____                                                |

***NON-FINAL REJECTION***

A new prior art reference necessitated a new ground of rejection is below:

***Claim Objection***

Claims 28 and 35 are objected to in that the recitation “the engaged first and second welding parts” on line 2 of claim 28 and “the ink chambers” on line 2 of claim 35 lacks clear antecedent basis. Correction is required.

***CLAIM REJECTIONS***

***Claim Rejections - 35 USC § 112***

Claims 26 and 28-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 26, it is unclear what the “contact sections” are and how they are read on the preferred embodiment or seen on the drawings.

In claim 28, it is unclear what the “engaged first and second welding parts” are and where they are from.

In claim 34, it is not understood where the “welder” comes from and how the vibration can be applied.

In claim 35, the description is incomplete because the claim fails to provide the structural relationship between the cartridge body and lid with the holes and chambers.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5-10, 12-14, 26 and 28-30 are rejected under 35 USC 103 (a) as being unpatentable over applicants' admitted prior art (as shown in Figures 1-4) in view of Meadows (US 5,181,936).

Applicants' admitted prior art discloses in Figures 1-4 an ink cartridge comprising:

- a cartridge body (102) partitioned into foam chambers (106) and ink chambers (108), and having a first welding part (122) and a second welding part (124);
- a lid (104) having a third welding part (126), engageable and weldable with the first welding part (122) of the cartridge body (102), and a fourth welding part (128) on the bottom thereof in which the second welding part (124) is insertable;
- at least one ink head (117) provided on the bottom of the cartridge body (102) to eject ink;
- at least one ink filter (115) provided on an upper side of each ink head to prevent foreign materials or bubbles from flowing in;
- wherein the cartridge body (102) holds one or more color inks, and further includes one or more partitions (110) partitioning different color inks;
- wherein the upper end portions of the second welding part (124) are a convex shape;
- wherein a plurality of ink injection holes (119, 120), for injecting ink into the ink chambers (106, 108), are each sealed by a ball (not shown); and
- wherein the upper sides of the groove are symmetrical triangle in cross-section and an angle between extension lines from two symmetric faces of the symmetric triangle ranges from 30 to 150 degrees, see Figure 1.

However, the admitted prior art does not suggest that the second welding part has a thickness less than a width of each of the grooves in the fourth welding part, so that a predetermined space occurs on both sides of each second welding part when the welding part is inserted in the fourth welding parts. For example, the second welding part (124) of the admitted prior art is triangular shape.

Meadows suggests in Figures 1-4 a cover (16) being welded to a container (2) of a battery in which a second welding part (38) is a rectangular shape and has the width less than a width of a fourth welding part (groove 18) for being capable of withstanding high internal pressure with low cost, see lines 60-68, column 1.

It would have been obvious to a person having skill in the art at the time the invention was made to make the second welding part of the admitted prior art in a rectangular shape which has a thickness less than a width of the grooves in the fourth welding part as claimed for the purpose of being capable of withstanding high internal pressure with low cost. Noted that the modified second welding part of the admitted prior art in the rectangular shape as suggested by Meadow would provide two contact sections as recited in claim 26.

Although the admitted prior art and Meadows does not disclose that the upper end portions of the second welding part has a concave shape as recited in claim 7 or the combination of rectangular and triangular shape as recited in claim 32, or specify that the predetermined spaces are substantially equal to or less than 0.4mm each as recited in claim 12; however, a skilled artisan realizes the shape of the second and fourth welding parts and the gap or space between the welding parts determine the bond between the lid and the container. Weaker bond would not tolerate the high internal pressure of the ink cartridge. Thus, selecting an optimum shape of the upper portions of welding part and the optimum gaps or the spaces as claimed is considered to be a matter of a mechanical design expedient for an engineer. . *In re Daily*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See MPEP 2144.04. Lacking of showing any criticality, it would have been obvious to a person having skill in the art at the time the invention was made to select the shape of the upper portions and the optimum spaces of the modified ink cartridge of

the admitted prior art as claimed for the purpose of providing a strong bond between the lid and the container to accommodate with a predetermined internal pressure of the ink cartridge.

Claims 2-4 are rejected under 35 USC 103 (a) as being unpatentable over applicants' admitted prior art (as shown in Figures 1-4) in view of Meadows (US 5,181,936) as applied to claim 1 and further in view of Altendorf (US Pat 6,183,072).

Applicants' admitted prior art (as shown in Figures 1-4) in view of Meadows discloses the basic features of the claimed invention as stated above but does not disclose first welding part that has a first section horizontally protruded in cross-section and a second section vertically protruded to the first section, and the third welding part has a third section vertically protruded, a fourth section horizontally protruded, and a fifth section in a diagonal cross-sectional shape connecting the third section and the fourth section; wherein the first section has a concave groove on the upper end portion thereof; and welding parts of lid and cartridge body are formed in triangular shapes and/or rectangular shapes and/or combining triangular and rectangular shapes with ranges from substantially 20 to 70 degrees.

Altendorf discloses in Figures 1B-4D an inkjet storage container comprising:

- a cartridge body (22) having a first welding part (87);
- a lid (28) having a second welding part (86), engageable and weldable with the first welding part, wherein at least one of the first and second welding parts has a concave groove (a concave groove is between two elements 86 to receive a projection 87, see Figs. 4A-4B or a concave groove is located in a lid 28 and received an element 110 of the cartridge body 22, see Figure 3B) in which the other of the first and the second welding parts is insertable and a predetermined space occurs on both sides of the engaged first and second welding parts; wherein the predetermined space is substantially equal to, or less than, 0.4 mm;
- wherein the lid (28) and the cartridge body (22) do not substantially slide against each other when vibration is applied by an ultrasonic welder;

- a first welding part (63) that has a first section horizontally protruded in cross-section and a second section vertically protruded to the first section, and the third welding part (86) has a third section vertically protruded, a fourth section horizontally protruded, and a fifth section in a diagonal cross-sectional shape connecting the third section and the fourth section (Figs. 4A-4D); and
- wherein the first section has a concave groove on the upper end portion thereof (Fig. 4C).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Altendorf in the modified ink cartridge of the Applicants' admitted prior art for the purpose of stably sealing between a lid and a cartridge body without ink leakage by using adhesive or ultrasonic welding.

Although the Applicants' admitted prior art in view of Meadows and Altendorf does not specify that the angle ranges from substantially 20 to 70 as recited in claim 4; however, selecting an optimum angle number as claimed is considered to be a mechanical design expedient for an engineer depending upon a particular environment and the applications in which the ink jet cartridge is to be used. *In re Daily*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See MPEP 2144.04. Lacking of showing any criticality, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the optimum angle of the modified ink cartridge of the admitted prior art as claimed for the purpose of supporting the strong bond between the lid and the container.


### ***Response to Applicant's Arguments***

The applicant argues that Figures 1 and 3 of the applicant's admitted prior art does not disclose "a predetermined space occurs on both sides of each second welding part" because the second welding part (124) has a triangular shape and is welded with the fourth welding part (128) which is a flat surface. The argument is persuasive. However, this limitation is suggested in the Meadows reference as stated above.

The applicant argues that Altendorf does not disclose "the first welding part contacts with the second welding part with at least two contact sections". The argument is persuasive without traverse.

***CONCLUSION***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262. The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 7:00 P.M.. The fax number of this Group 2861 is (571) 273-8300.

  
**ANH T.N. VO**  
**PRIMARY EXAMINER**  
March 15, 2006